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ABSTRACT

This paper investigates the joint effects of intrinsic and extrinsic goals on college students' learning in an introductory psychology course, a biology course, and several social science courses. The study questioned whether higher levels of motivation lead to better student performance. College students were surveyed using the Intrinsic Goal Orientation and Extrinsic Goal Orientation scales of the Motivation Strategies for Learning Questions (MSLQ). Results indicate that students with a medium level of extrinsic motivation are more likely to perform well (in terms of their course grades) than students with either lower or higher levels of extrinsic motivation. Students who combined high intrinsic motivation with medium extrinsic motivation achieve particularly well. The paper suggests that teachers need not eliminate all motivation for good grades in order to achieve both cognitive and lifelong learning goals. (Contains 10 references and one table.) (JDM)

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College Student Intrinsic and/or Extrinsic Motivation and Learning

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Abstract

Problem: Do higher levels of motivation lead to better performance?

Method: We investigated the joint effects of intrinsic and extrinsic motivation as assessed by the Intrinsic Goal Orientation and Extrinsic Goal Orientation scales of the Motivated Strategies for Learning Questionnaire (MSLQ) in two samples of students' performance in a "Learning to Learn" course and in a third sample of nine classes in three disciplines.

Results: Students with a medium level of extrinsic motivation are more likely to perform well (in terms of their course grades) than students with either lower or higher levels of extrinsic motivation. Those who couple high intrinsic motivation with medium extrinsic motivation achieve particularly well.

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College Student Intrinsic and/or Extrinsic Motivation and Learning

In recent years a plethora of bi-polar terms have been proposed to describe student motivation and goals. Probably the oldest of these dichotomies is intrinsic vs. extrinsic motivation.

Extrinsic motivation has had a bad name ever since Harlow ( ) reported that monkeys who had enjoyed solving puzzles would, after being rewarded with food for each puzzle solved, no longer solve puzzles when they were not given the extrinsic reward of food. Monkeys who had not been given food continued to enjoy solving puzzles.

Are extrinsic and intrinsic motives necessarily incompatible? Certainly much research with humans since Harlow has found results similar to his. (Amabile, 1979; Harackiewicz, Manderlink & Sansone, 1984). And William Perry Harvard was fond of quoting the student who said, "I can't afford to get interested in this course because I have to get a good grade".

One of the goals of higher education is to increase motivation for life-long learning. If extrinsic motivation is really so damaging, our task is almost hopeless. Michael Pressley and his colleagues (Pressley et.al., 1998) found that every student in their interview study reported that getting a good grade was their overriding motivation in courses. To quote Pressley et al. (p353), "Students made it quite clear that all other goals were secondary."

Other theorists (e.g. Dweck, 1986; McKeachie, 1961) have proposed that college students have multiple goals in learning. Students want to master expert knowledge in their special fields. At the same time, they also want to obtain good grades in order to demonstrate their competence, a performance goal. Mastery and performance goals may play complementary roles in motivating student learning. However Harackiewicz, Barrron, Carter, Lehto and Elliot (1997) have shown that mastery and performance goals have different correlates. Harackiewicz, Barron and Elliot (1998) found that while mastery goals were related to interest, performance goals were more predictive of final grades in a

psychology course. These findings, taken together with Urdan and Maehr's work (1996) with social goals for achievement, provide evidence for their theoretical standpoint that college students have multiple goals for learning. But are extrinsic motivation and intrinsic motivation necessarily incompatible? Our goal as teachers is to increase intrinsic motivation for lifelong learning. Yet it is unrealistic to think that we can persuade students that grades don't matter. The question is whether there may be optimal joint levels of these two goals to facilitate learning.

The present study investigated the joint effects of intrinsic and extrinsic goals on students' learning in an introductory psychology course and in several biology, English psychology and other social science courses. Can extrinsic motivation combine effectively with intrinsic motivation in affecting learning or are the two motivational orientations incompatible? Recognizing that few students are unmotivated for grades, we hypothesized that a medium level of extrinsic motivation in combination with high level of intrinsic motivation would be more effective in facilitating learning than either low or high levels of extrinsic motivation.

Method

Participants

The participants in this study consist of three samples of college students. The first sample had 75 students enrolled in a "Learning to Learn" course at a large research university. The second sample had 73 students in the same course in the following year. The third sample had 432 students of nine classes in three disciplines: biology, English literature, and social sciences in a liberal arts college, a comprehensive university and a community college.

Procedure

The Intrinsic Goal Orientation and Extrinsic Goal Orientation scales of the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, & McKeachie, 1993) were used to assess students' intrinsic and extrinsic motivation. The

Intrinsic Goal Orientation scale consists of 4 items. One of the items is: "I prefer work that is challenging." Another item is "I prefer course work that arouses my curiosity, even if it is difficult." The Extrinsic Goal Orientation scale has 2 items, one of which is "Getting good grades is my main goal for this course." The other item is "A good grade in this course is more important to me than what I learn from the course."

The participants completed a self-scored version of MSLQ near the end of semester with a 5-point scale ranging from 1 "not at all true of me" to 5 "very true of me". The MSLQ scales used in the third sample had a 7-point scale ranging from 1 "not at all true of me" to 7 "very true of me". The course grades of each class in the third sample were standardized with a mean of 50.0 and a standard deviation of 10.0 in order to aggregate the data for analysis. The scores of both scales were divided into low, medium and high levels to form a 3 x 3 table. The means of course grades of nine cells were computed.

Results

Tables 1, 2 and 3 present the cell means of course grades of joint effects of the intrinsic and extrinsic goal orientation. In all three samples students with a medium level of extrinsic motivation and high intrinsic motivation have higher mean course grades than students with either low or high extrinsic motivation.

Insert Tables 1, 2 and 3 about here

Conclusions

As our results indicate, a moderate level of extrinsic motivation is better than a high level, while higher levels of intrinsic motivation are positively related to grades. These results suggest the importance of considering curvilinear relationships and interactions when generalizing about the effects of different goals or motives on performance. They also reveal that teachers need not eliminate all motivation for good grades in order to achieve both cognitive and lifelong learning goals.

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Table 1. Means and Standard Deviations of Course Grades of Sample 1

		Extrinsic Motivation: Low	Medium	High	
Intrinsic Motivation	Low	**7.0** (1.0) N=3	**6.5** (1.5) N=4	**5.5** (2.7) N=11	**5.9**
	Medium	**6.3** (2.7) N=6	**6.8** (1.6) N=9	**4.4** (2.8) N=8	**5.9**
	High	**6.6** (2.0) N=11	**7.2** (2.0) N=10	**6.7** (1.7) N=11	**6.8**
		6.6	**6.9**	**5.6**	**6.3**

Course grade: 1 = D, 9 = A+

Table 1. Means and Standard Deviations of Course Grades of Sample 2

		Extrinsic Motivation: Low	Medium	High	
Intrinsic Motivation	Low	**5.5** (0.6) N=4	**6.0** (2.4) N=6	**6.1** (1.3) N=13	**6.0**
	Medium	**6.1** (2.1) N=7	**8.0** (1.0) N=7	**6.0** (2.9) N=5	**6.8**
	High	**6.5** (1.6) N=13	**7.1** (0.7) N=10	**6.6** (1.7) N=8	**6.7**
		6.3	**7.1**	**6.2**	**6.5**

Course grade: 1 = D, 9 = A+

Table 1. Means and Standard Deviations of Course Grades of Sample 3

		Extrinsic Motivation			
		Low	Medium	High	
	Low	**45.8** **(9.5)** **N=77**	**49.1** **(11.8)** **N=21**	**51.0** **(8.8)** **N=69**	**48.4**
Intrinsic Motivation	Medium	**49.7** **(10.5)** **N=38**	**50.5** **(9.2)** **N=46**	**50.2** **(9.0)** **N=39**	**50.2**
	High	**50.4** **(11.1)** **N=58**	**55.8** **(7.9)** **N=42**	**52.3** **(7.6)** **N=42**	**52.5**
		48.2	**52.7**	**51.1**	**50.3**

Course grade is standardized score with mean = 50, standard deviation = 10.